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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,121	09/08/2003	Masayasu Sato	117048	7049
25944	7590	09/10/2007	EXAMINER	
OLIFF & BERRIDGE, PLC			DUONG, THANH P	
P.O. BOX 19928			ART UNIT	
ALEXANDRIA, VA 22320			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/656,121	Applicant(s) SATO ET AL.	
	Examiner Tom P. Duong	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Tom Duong
8/28/07

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 13, 2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Publication Number 09-317452 (hereinafter JPN '452) in view of Pfefferle (4,402,662) or WO 99/64732 and Strader '502.

Regarding claims 1-2, and 8-10, JPN '452 discloses an exhaust-gas purifying apparatus (Figure 3), comprising: an outer cylinder (41); a plurality of cylinder-shaped supports (43) disposed in the outer cylinder, and having an outer peripheral surface and an inner peripheral surface, at least two of the neighboring cylinder-shaped supports with perforations (Section 0027-0028) contacting with each other with the outer peripheral surfaces (Figure 3); and catalytic layer loaded on least one the outer

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peripheral surface and inner peripheral surface of the cylinder-shaped supports (Section 0013).

JPN '452 is silent with respect to at least one of the cylinder-shaped supports has a ring-shaped cross-section with a cut-off, and is disposed in the outer cylinder in such an elastically deformed state, the cylinder-shaped supports are inscribed in a circle having a diameter inferior to the inside diameter of the outer cylinder and the diameter of the cylinder-shaped supports are superior to the outer cylinder when not fitted into the cylinder.

Pfefferle '662 teaches it is desirable to provide the catalytic structure with a with slot 4 or "C" shaped slit cylinder configuration with perforations (2) to provide a catalytic structure that can resist thermal shock from temperature gradient between the internal portion 3 and external portion 4. Thus, it would have been obvious in view of Pfefferle to one having ordinary skill in the art to modify the apparatus of JPN '452 with a ring-shaped cross-section with a cut-off as taught by Pfefferle in order to minimize thermal shock.

Likewise, WO 99/64732 teaches the benefit of providing a compressible slotted cylinder 10 (page 4, lines 23 – page 5, lines 4) with perforations (page 5, lines 28-32) to facilitate in inserting into the exhaust pipe and the friction force exerted between the outer surface of slotted cylinder 10 and the inner surface of the exhaust pipe holds the slotted cylinder 10 in placed (Figures 2 and 4). Thus, it would have been obvious in view of WO 99/64732 to one having ordinary skill in the art to modify the cylinder body of

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JPN '452 with the slot or cut off as taught by WO 99/64732 in order to gain the above benefit.

JPN '452 also fails to disclose groups of the cylinder-shaped supports are disposed out of phase.

Strader '502 teaches a plurality of gas conduit groups with each group in chambers A, B, and C. Strader shows the last chamber (Fig. 6) with tubes or supports (32, 28, 30) are out of phase with respect to the previous chamber C (Fig. 5) with tubes 28, 30, and 26 in axial direction of the outer cylinder (11). Such configuration suppresses the audible vibrations of the exhaust gas (Col. 1 – Col. 2) prior to leaving the muffler. Thus, it would have been obvious in view of Strader '502 to one having ordinary skill in the art to modify the apparatus of the JPN '452 with the configuration of a cylinder support groups as taught by Strader '502 in order to reduce the sound level of the exhaust gases.

Regarding claims 3 and 4, JPN '452 discloses the shells can be welded to each other on the peripheral surfaces (Sections 0004-0006).

Regarding claim 5, JPN '452 appears to disclose the outer cylinder and the cylinder shaped supports are metallic material being the fact that JPN '452 discloses the components can be welded together (Sections 0015 and 0032). Note, it is conventional to provide the outer cylinder and the cylinder-shaped support of a catalytic structure made of metallic material and it would have been obvious to do so here to provide a catalyst support with improved structural strength.

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Regarding claim 6, JPN '452 fails to disclose the cylinder supports are formed with a plurality of thru holes. Pfefferle '452 teaches cylinder-shaped support (1) with a plurality of perforations or radial passage (2) and such configuration facilitates mixing of the exhaust gas in radial flow. Thus, it would have been obvious in view of Pfefferle to one having ordinary skill in the art to modify the apparatus of JPN '452 with plurality of holes in the cylinder support to facilitate mixing of the exhaust gas in radial flow direction.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 and 9-15 of copending

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Application No. 10/656,178. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending application 10/656,178 claims substantially the same subject matter of the claimed invention and the term “outer cylinder” of the instant claim is obvious alternative language of the term “mantle” of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed July 13, 2007 have been fully considered but they are not persuasive.

(1) The art rejection with respect to JP '452 in view of WO '937 is withdrawn, rendering moot.

(2) Applicants argue that “A close examination of Figs. 2-6 of Strader and the relevant portions of the Strader disclosure, however, indicates that the position of the chambers A, B and C in the peripheral direction are in phase. For example, chambers A, B and C are disposed coaxially at predetermined intervals in the axial direction. Within each chamber, Strader teaches that the gas tubes are arranged in a side-by-side relationship and in parallel alignment to assume a triangular relationship in each chamber (col. 6, lines 27-33).” Examiner respectfully disagrees. It is submitted that JPN '452 alone discloses a group of cylinder-shaped supports (42, 43) with each support being disposed out of phase within the outer cylinder 11. The Strader reference

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shows all cylinder-shaped tubes or supports are disposed out of phase within each chamber A, B, C. Strader further shows at least one chamber is out of phase with respect to the previous chamber in the axial direction of the outer cylinder (11).

Examiner agrees that Strader shows chamber A, B, and C as shown in Figures 3-5 that the tubes or supports are in phase in axial direction of the outer cylinder (11); however, Strader shows the last chamber (Fig. 6) with tubes or supports (32, 28, 30) are out of phase with respect to the previous chamber C (Fig. 5) with tubes 28, 30, and 26 in axial direction of the outer cylinder (11).

(3) Applicants also request the nonstatutory obviousness-type double patenting (ODP) rejection should be withdrawn being as the claims in the instant application are the base invention and claims in the copending application are the improvement. The ODP rejection in the instant application is maintained being the fact that the provisional ODP rejections in the instant and the copending applications are not the only rejections remaining in theses two applications. See MPEP 804.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Duong
August 27, 2007

A handwritten signature in cursive script that reads "Tom Duong".